



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

March 30, 2016

Fred T. Smith  
Agent (SciReg, Inc.)  
J.J. Mauget Co.  
5435 Peck Rd.  
Arcadia, CA 91006

Subject: Notification per PRN 98-10 – Increasing drill bit size for tree injections  
Product Name: Abacide 2  
EPA Registration Number: 7946-27  
Application Date: March 24, 2016  
Decision Number: 515512

Dear Mr. Smith:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The label submitted with the application has been stamped “Notification” and will be placed in our records.

Should you wish to add/retain a reference to the company’s website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA’s Office of Enforcement and Compliance.

Page 2 of 2  
EPA Reg. No. 7946-27  
Decision No. 515512

If you have any questions, please contact Jessica Rogala by phone at 703-347-0263, or via email at [rogala.jessica@epa.gov](mailto:rogala.jessica@epa.gov).

Sincerely,

A handwritten signature in black ink that reads "J Rogala" with a stylized flourish at the end.

Mark Suarez, Product Manager 07  
Invertebrate & Vertebrate Branch 3  
Registration Division (7505P)  
Office of Pesticide Programs

MASTER LABEL

  
**ABACIDE™ 2**

SYSTEMIC MITICIDE/INSECTICIDE  
FOR TREE INJECTION USE FOR CONTROL/SUPPRESSION OF LISTED MITES/INSECTS OF ORNAMENTAL/OTHER TREES  
INTENDED FOR USE BY PROFESSIONAL APPLICATORS

MFG. BY:  
TOWN, STATE:  
EPA REGISTRATION NO:  
EPA ESTABLISHMENT NO:

J.J. MAUGET CO.  
Arcadia, CA 91006  
7946-27

**ACTIVE INGREDIENT:**

Abamectin (CAS # 71751-41-2)..... 1.9%

**OTHER INGREDIENTS:**..... 98.1%

**TOTAL**..... 100.0%

1 gallon contains 0.15 lb abamectin

**KEEP OUT OF REACH OF CHILDREN  
WARNING**

**NOTIFICATION**

7946-27

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

03/30/2016

**SUB LABEL A: PACKAGED IN READY TO USE CAPSULES**



**ABACIDE™ 2**

SYSTEMIC MITICIDE/INSECTICIDE IN READY TO USE CAPSULES FOR TREE INJECTION USE FOR CONTROL/SUPPRESSION OF LISTED MITES/INSECTS OF ORNAMENTAL/OTHER TREES INTENDED FOR USE BY PROFESSIONAL APPLICATORS

MFG. BY: J.J. MAUGET CO.  
TOWN, STATE: Arcadia, CA 91006  
EPA REGISTRATION NO: 7946-27  
EPA ESTABLISHMENT NO: 7946-CA-1

**ACTIVE INGREDIENT:**  
Abamectin (CAS # 71751-41-2)..... 1.9%

**OTHER INGREDIENTS:**..... 98.1%

**TOTAL**..... 100.0%

1 gallon contains 0.15 lb abamectin

**Net Contents:**

- \_\_\_\_\_ 24 capsules plus 24 feeder tubes per carton
- \_\_\_\_\_ 24 capsules @ 0.07 fl. oz. (2 mL) each, 1.62 fl. oz. (48 mL) net
- \_\_\_\_\_ 24 capsules @ 0.10 fl. oz. (3 mL) each, 2.42 fl. oz. (72 mL) net
- \_\_\_\_\_ 24 capsules @ 0.14 fl. oz. (4 mL) each, 3.25 fl. oz. (96 mL) net
- \_\_\_\_\_ 24 capsules @ 0.17 fl. oz. (5 mL) each, 4.04 fl. oz. (120 mL) net
- \_\_\_\_\_ 24 capsules @ 0.26 fl. oz. (7.5 mL) each, 6.24 fl. oz. (180 mL) net

**Shipping box: 12 cartons as above.**

- \_\_\_\_\_ 288 capsules @ 0.07 fl. oz. (2 mL) each, 19.5 fl. oz. (576 mL) net
- \_\_\_\_\_ 288 capsules @ 0.10 fl. oz. (3 mL) each, 29.2 fl. oz. (864 mL) net
- \_\_\_\_\_ 288 capsules @ 0.14 fl. oz. (4 mL) each, 39.0 fl. oz. (1152 mL) net
- \_\_\_\_\_ 288 capsules @ 0.17 fl. oz. (5 mL) each, 48.7 fl. oz. (1440 mL) net
- \_\_\_\_\_ 288 capsules @ 0.26 fl. oz. (7.5 mL) each, 74.9 fl. oz. (2160 mL) net

**KEEP OUT OF REACH OF CHILDREN  
WARNING AVISO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail).

	FIRST AID
<b>IF SWALLOWED</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>IF IN EYES</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF ON SKIN OR CLOTHING</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF INHALED</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact <b>INFOTRAC 1-800-535-5053</b> for emergency treatment information.</p>	

**NOTE TO PHYSICIAN**

Early signs of intoxication include dilation of pupils, muscular incoordination, and muscular tremors. Toxicity following accidental ingestion of Abacide 2 can be minimized by early administration of chemical absorbents (e.g., activated charcoal). If toxicity from exposure has progressed to cause severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive parental fluid replacement therapy should be given, along with other required supportive measures (such as maintenance of blood pressure levels and proper respiratory functionality) as indicated by clinical signs, symptoms, and measurements. In severe cases, observations should continue for at least several days until clinical condition is stable and normal. Since abamectin is believed to enhance GABA activity in animals, it is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, valproic acid) in patients with potentially toxic abamectin exposure.

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**WARNING.** May be fatal if swallowed. Causes substantial but temporary eye injury. Do not get in eyes. Harmful if absorbed through the skin or inhaled. Avoid contact with skin or clothing. Avoid breathing vapors.

**PERSONAL PROTECTIVE EQUIPMENT (PPE):**

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category B on an EPA chemical resistance category selection chart. **APPLICATORS AND OTHER HANDLERS MUST WEAR:**

- Long-sleeved shirt and long pants
- Chemical resistant gloves, such as barrier laminate or butyl rubber ≥ 14 mils
- Shoes plus socks
- Protective eyewear

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**USER SAFETY RECOMMENDATIONS**

Users should:

- Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove contaminated clothing and wash clothing immediately before reuse.

**NOTICE:** This product contains a chemical (N-methyl pyrrolidone) known to the state of California to cause birth defects or other reproductive harm.

**ENVIRONMENTAL HAZARDS**

This pesticide is toxic to fish and wildlife. Do not apply directly to water. Do not contaminate water when disposing of equipment washwaters or rinsate. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops.

**PHYSICAL OR CHEMICAL HAZARDS**

Do not use or store near heat or open flame.

**STORAGE AND DISPOSAL**

Do not contaminate water, food or feed by storage or disposal of micro-injection capsules. Do not reuse micro-injection capsules.

**PESTICIDE STORAGE:** Store in a cool dry place out of the reach of children. Store capsules in an upright position in closed carton. Keep out of direct sunlight when possible.

**PESTICIDE DISPOSAL:** Dispose of partially used capsules at an approved waste disposal facility.

**CONTAINER HANDLING:** Offer for recycling, if available. Dispose of empty capsules in a sanitary landfill or by incineration if approved by State and Local authorities.

## DIRECTIONS FOR USE

IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT IN A MANNER INCONSISTENT WITH ITS LABELING.

### RESTRICTIONS

For terrestrial nonfood use only. Due to toxicity to bees, use for tree micro-injection only as a post-bloom application. Do not inject trees that are less than two inches in diameter. This product is NOT to be used on trees which will produce food within the year following treatment.

### USE DIRECTIONS

ABACIDE 2 insecticide is intended for use by commercial Arborists (applicators) on forest, woodlands, Christmas and ornamental trees, trees growing in parks, cemeteries, golf courses, and seed and cone nurseries/orchards for control of bud and leaf pests; shoot, stem, trunk, branch, and phloem-feeding pests; and suppression of pine cone worms, pine seed bugs, and aphids, thrips, and whiteflies. ABACIDE 2 can also be applied in commercial or residential landscapes, interior and exterior plantscapes, and other areas where ornamental trees and woody shrubs are grown. Make applications prior to pest appearance or after they are observed. A single application lasts one growing season. For two-season control of Scolytid Bark Beetle, see Pest, Rate, and Timing table below.

#### Timing of Application:

Preventive applications 2 to 4 weeks prior to anticipated feeding damage will provide better management, but rescue treatments will also perform well with acceptable minimal damage. For bark beetles such as Engraver beetle, Mountain Pine beetle, and Southern pine beetle, late summer/early fall treatments the year prior to next season infestation are preferred, but not exclusive.

#### Combination Treatments:

When treating for beetles that carry fungi (ambrosia), an additional treatment of fungicide may improve management strategies. Materials to consider are fungicides labeled for use against vascular-inhabiting fungi.

#### 1. The MAUGET GENERATION II SYSTEM

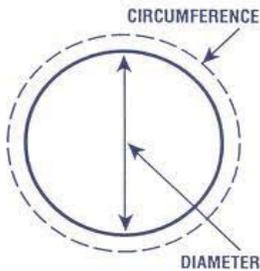
- (A) Mauget compressible capsule with insert hole
- (B) Feeder tube with flanged gun-sight and opposite tapered beveled end

#### 2. TOOLS

- (A) Portable electric drill
- (B) 11/64 in. (0.4 cm) drill bit
- (C) Plastic mallet
- (D) Tape measure
- (E) Insertion tool (optional)

#### 3. NUMBER OF CAPSULES

Measure the circumference or diameter of the tree at chest height at a level of 4.5 feet from the soil-line using a tape measure or an arborist diameter tape. If measuring the circumference, divide this number by six (6) to determine the number of capsules needed. If measuring the diameter at breast height (DBH), divide this number by 2 (two) to determine the number of capsules needed.



If the number of capsules results in a fraction, round up to the higher whole number. To account for trunk flare, place injection sites evenly (every 6-8 inches) around the base of the root flare within 6 to 8 inches of the root crown. For treatment of pinewood wilt nematode, space injection sites every 4 inches of circumference. For pines and other resinous conifer species, injection sites may be higher up on trunk (refer to Step 5). Follow good injection practices. Disinfect drill bit prior to use on each tree.

Use the following dosage, depending on tree diameter, *unless treating for Scolytid beetles* (see Application Chart):

- 2 mL capsules – 2 to 10 inches DBH or 6 to 30 inches of circumference; space capsules at approximately 6 inch intervals
- 3 mL capsules – 10 to 36 inches DBH or 30 to 113 inches of circumference; space capsules at approximately 6 inch intervals
- 4 mL capsules – 36 inches DBH and above or 113+ inches in circumference; space capsules at approximately 6 inch intervals

For heavier infestation and/or more persistent insects, use the 4 mL capsules for all tree sizes. Trees in advanced stages of insect infestation may not respond to treatment. The health, species of the tree and the environmental conditions will determine the rate of uptake.

For trees that require higher dosages per diameter inch, multiply the desired dosage by tree size, then divide by the capsule dosage to achieve total number of capsules. The 7.5 mL dosage allows for a single ring of capsules around the tree at closer spacing. Alternatively, use a piggy-back application (same feeder tube, 2 capsules drained back to back) with the 5 mL dosage at the standard spacing of every 6 inches circumference.

For example, using the Ips beetle rate of 5-20 mL per diameter inch, a rate of 5 mL per inch DBH delivered with a 7.5 mL capsule is:

- a) 20 inch DBH tree x 5 mL per inch DBH = 100 mL per tree.
- b) Divide 100 mL by 7.5 mL capsule.
- c) Total capsules: 13.3; round to 14 total capsules. Round all fractions up to the next higher number.
- d) Divide the circumference (62.8 inches) by 14 capsules = 4.5 inches.
- e) Space capsules every 4-5 inches around the circumference of the tree.

**4. PRESSURIZING THE CAPSULES**

Pressurize capsules before or after installation. Making applications in high-altitude conditions may be difficult, due to the button not locking down. This is an indication of high internal capsule pressure that results in faster diffusion of product into the tree. To maintain optimal pressure, monitor the capsules after installation and pressurize units when half of the dosage is administered. If the center button depresses too easily and drainage is slow, pre-puncturing the capsule port membrane with the feeder tube prior to installation will equalize pressure to allow for diffusion.

**5. DRILLING THE TREE HOLE**

Unless otherwise noted, predrill, at approximately 6 in. intervals, injection sites at a slight downward angle at the root flair/buttruss area (approximately 6.0 to 8.0 in., 15 to 20 cm) above ground level, using a clean 11/64 in. (0.4 cm) drill bit (except monocotyledons, conifers, etc.). Drill to a depth of 3/8 to 1/2 in. (0.95 to 1.3 cm) into healthy xylem tissue under the bark. For mini-micro feeder tube, see Step 10. Disinfect drill bit, insertion tool (if used) as well as mini-micro insertion tool prior to use on each tree. For conifer species with high resin pressure, place injection sites higher on the trunk (36-48") and to a deeper drill depth of 2+ inches.

**6. TREE HOLE DEPTH**

It is important that the feeder tube be set to the proper depth in the conductive xylem tissue. If set too deeply, flow is restricted by blockage in the heartwood; if set too shallow, leakage may occur. The feeder tube dispensing end is beveled to allow for a 1/4 in. plus tolerance.

**7. COMBINING CAPSULE AND FEEDER TUBE**

Several methods of combining the capsule with the feeder tube are acceptable including placing by hand, the feeder tube's flange end, with the flange notch upward, into the capsule insert hole of a compressed upright capsule. Push the flange end of the feeder tube flush with the membrane located at the inner end of the insert hole.

**8. PLACING THE FEEDER TUBE IN THE TREE**

Firmly seat the beveled, dispensing end of the feeder tube, with the attached upright capsule, into the predrilled tree injection hole. Tap the rear side, opposite the insert hole of the capsule with a mallet. This action will simultaneously seat the feeder tube in the injection hole while breaking the capsule membrane for releasing the capsule contents into the feeder tube and into the tree. Another method is to place the feeder tube in the predrilled hole of the tree using the optional insertion tool. Then place the compressed capsule onto the feeder tube in place.

**9. REMOVAL**

Uptake in the tree usually occurs within several minutes. Capsules may be temporarily rotated in place to see if any liquid is left. When empty, turn the capsules upside down for one minute before removal. Applicators must remove micro-injectors promptly after treatment. Empty capsules must not be left on the tree. The health and species of the tree, and local environmental conditions will determine the rate of uptake. If the capsule does not completely empty within a few hours, invert and carefully remove the capsule and enclose it in a heavy duty plastic bag for disposal in accordance with state and local regulations.

**10. MINI-MICRO FEEDER TUBE**

For established trees with thin bark (less than 3/8 in. thickness), use a 7/64 in. drill bit to produce a micro-injection site for a mini-micro feeder tube (special order size). Use of the Mini-Micro Insertion tool is recommended.

TARGET PESTS, APPLICATION RATES and TIMING	
PEST	RATE
Aphid, Thrip, and Whiteflies	1-2mL/inch DBH, suppression.
Clearwing Moth Borers, such as Ash, Fir, Oak, Pine, Sequoia Pitch Moth, Sycamore, and Willow	1-2 mL/inch DBH.
Leaf Beetle and Leaf Miner	1-2 mL/inch DBH. Treat just prior to insect activity in area.
Lepidopteran larvae, such as Bagworm, Spruce Budworm, Webworms, Gypsy Moth, Tent Caterpillars, Oakworm, Tussock Moth, Winter Moth, and Zimmerman Moth	1-2 mL/inch DBH. Treat just prior to insect activity in area.
Mites, such as warm and cool season mites, Palm mites, rust mites, gall mites, and eriophyid mites	1-2 mL/inch DBH. Treat just prior to insect activity in area.
Pine Cone Worm and Pine Seed Bug	5-20 mL/inch DBH. Treat 3-4 weeks prior to anticipated insect activity. Fall provides better distribution of product throughout tree.
Pinewood Wilt Nematode (except CA)	3-5 mL/in DBH or 4-6 mL every 4 inches of trunk circumference.
Plant bugs, such as Ash, Honey Locust, and Sycamore	1-2 mL/inch DBH. Treat just prior to insect activity in area.
Roundheaded Borers such as Sawyer beetle (except Asian Longhorned Beetle)	5-20 mL/inch DBH.
Sawfly larvae, such as Elm and Pine	1-2 mL/inch DBH. Treat just prior to insect activity in area.
Scolytid Bark Beetle, such as Ips Engraver Beetle, Mountain Pine Beetle, Southern Pine Beetle, Spruce Beetle, Turpentine Beetle, and Western Pine Beetle	5-20 mL. Fall provides better distribution of product throughout the tree.
Sycamore Lace Bug	1-2 mL/inch DBH. Treat just prior to insect activity in area.

March 24, 2016

NOTE: For Scolytid beetle treatment, use the lower dosage range for single-season control, Use the mid- to high dosage range for two-season control.

**NOTICE OF WARRANTY**

To the extent consistent with applicable law, J.J. Mauget Co. makes no warranty of merchantability, fitness for any purpose or otherwise expressed or implied concerning this product or its uses which extends beyond the use of the product under normal conditions in accord with the statements made on this label.

**SUB LABEL B: PACKAGED IN BRANDT® enTREE® READY TO USE LOW PRESSURE Micro Tree INJECTION DEVICES**



**ABACIDE™ 2**  
 SYSTEMIC MITICIDE/INSECTICIDE  
 FOR TREE INJECTION USE FOR CONTROL/SUPPRESSION OF LISTED MITES/INSECTS OF ORNAMENTAL/OTHER TREES

MFG. BY: J.J. MAUGET CO.  
 TOWN, STATE: Arcadia, CA 91006  
 EPA REGISTRATION NO: 7946-27  
 EPA ESTABLISHMENT NO: 48813-IL-1

**ACTIVE INGREDIENT:**  
 Abamectin (CAS # 71751-41-2)..... 1.9%

**OTHER INGREDIENTS:**..... 98.1%

**TOTAL** ..... 100.0%

1 gallon contains 0.15 lb abamectin

**Net Contents:**

- \_\_\_ 4 RTU devices @ 10 mL each; 40 mL net plus 4 injectors
- \_\_\_ 12 RTU devices @ 10 mL each; 120 mL net plus 12 injectors
- \_\_\_ 24 RTU devices @ 10 mL each; 240 mL net plus 24 injectors
- \_\_\_ 50 RTU devices @ 10 mL each; 500 mL net plus 50 injectors

**KEEP OUT OF REACH OF CHILDREN  
 WARNING AVISO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail).

<b>FIRST AID</b>	
<b>IF SWALLOWED</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>IF IN EYES</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF ON SKIN OR CLOTHING</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF INHALED</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact <b>INFOTRAC 1-800-535-5053</b> for emergency treatment information.</p>	

**NOTE TO PHYSICIAN**

Early signs of intoxication include dilation of pupils, muscular incoordination, and muscular tremors. Toxicity following accidental ingestion of Abacide 2 can be minimized by early administration of chemical absorbents (e.g., activated charcoal). If toxicity from exposure has progressed to cause severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive parental fluid replacement therapy should be given, along with other required supportive measures (such as maintenance of blood pressure levels and proper respiratory functionality) as indicated by clinical signs, symptoms, and measurements. In severe cases, observations should continue for at least several days until clinical condition is stable and normal. Since abamectin is believed to enhance GABA activity in animals, it is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, valproic acid) in patients with potentially toxic abamectin exposure.

**PRECAUTIONARY STATEMENTS  
 HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**WARNING.** May be fatal if swallowed. Causes substantial but temporary eye injury. Do not get in eyes. Harmful if absorbed through the skin or inhaled. Avoid contact with skin or clothing. Avoid breathing vapors.

**PERSONAL PROTECTIVE EQUIPMENT (PPE):**  
 Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category B on an EPA chemical resistance category selection chart.

**APPLICATORS AND OTHER HANDLERS MUST WEAR:**

- Long-sleeved shirt and long pants
- Chemical resistant gloves, such as barrier laminate or butyl rubber ≥ 14 mils
- Shoes plus socks
- Protective eyewear

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**USER SAFETY RECOMMENDATIONS**  
 Users should:

- Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove contaminated clothing and wash clothing immediately before reuse.

**NOTICE:** This product contains a chemical (N-methyl pyrrolidone) known to the state of California to cause birth defects or other reproductive harm.

**ENVIRONMENTAL HAZARDS**

This pesticide is toxic to fish and wildlife. Do not apply directly to water. Do not contaminate water when disposing of equipment washwaters or rinsate. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops.

**PHYSICAL OR CHEMICAL HAZARDS**  
 Do not use or store near heat or open flame.

**STORAGE AND DISPOSAL**

Do not contaminate water, food or feed by storage or disposal.

**PESTICIDE STORAGE:** Keep pesticide in original container. Store in a cool (45°F-90°F), dry place out of direct sunlight and out of reach of children and animals.

**PESTICIDE DISPOSAL:** Waste resulting from the use of these devices may be disposed of on site or at an approved waste disposal facility. Remove connector from device for disposal.

**CONTAINER HANDLING:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available or dispose of in a sanitary landfill or by incineration if approved by State and Local authorities. Do not burn unless allowed by state and local ordinances. If burned, stay out of smoke.

### **DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

#### **Restrictions**

For terrestrial nonfood use only. Due to toxicity to bees, use for tree injection only as a post-bloom application. Do not inject trees that are less than 5" in diameter at breast height (DBH) (15" in circumference). This product is NOT to be used on trees which will produce food within the year following treatment unless food crop on treated tree is discarded and destroyed. A single application lasts one growing season, typically six months to one year dependent upon species.

Read entire label, use strictly in accordance with precautionary statements and directions, and with applicable state and federal regulations. Failure to follow label directions may result in poor control or tree injury, and may cause injury to people, animals and environment.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirement specific to your State or Tribe, consult the agency responsible for pesticide regulation.

### **USE SITES**

ABACIDE 2 insecticide is intended for use by commercial Arborists (applicators) on forest, woodlands, Christmas and ornamental trees, trees growing in parks, cemeteries, golf courses, and seed and cone nurseries/orchards for control of bud and leaf pests; shoot, stem, trunk, branch, and phloem-feeding pests; and suppression of pine cone worms, pine seed bugs, and aphids, thrips, and whiteflies. ABACIDE 2 can also be applied in commercial or residential landscapes, interior and exterior plantscapes, and other areas where ornamental trees and woody shrubs are grown.

### **FACTORS AFFECTING APPLICATION**

Applications are most effective when made prior to insect infestation and in conjunction with good cultural management practices. The species and health of the tree, as well as local environmental conditions, will determine the rate of uptake when using the BRANDT enTREE Ready-To-Use (RTU) low-pressure micro tree injection technology. Uptake time in the tree usually occurs within several minutes to over an hour, but trees in advanced stages of insect infestation may not respond to treatment.

#### **Environmental Conditions**

This technology relies on the natural uptake rate of the tree; and thus, factors that affect the transpiration rate can greatly affect the uptake rate. Transpiration is dependent upon a number of factors, such as soil moisture, soil and air temperatures, and time of day. For optimum uptake, apply when soil moisture is adequate and soil temperatures are above 45°F. Preferred conditions for injections are morning to early afternoon hours, with warm temperatures (55-85°F / 13-30°C), accompanied by low humidity, clear skies and a slight breeze. Sunny conditions along with moist soil and a well-hydrated tree will also increase the transpiration rate and will therefore improve uptake. Conversely, cool temperatures, cloudy and/or evening skies and trees under moisture stress will slow down the rate of uptake. Extreme heat and cold temperatures will adversely affect rates as well.

Trees that have healthy vascular systems will have correspondingly higher uptake rates. Trees in advanced stages of pest development may not respond to treatment, as vascular plugging caused by disease inhibits transpiration. If the ABACIDE 2 has not started to absorb within two hours, consider removing the device (following the proper sequence provided in the removal instructions) and; drill a new hole in a different area of the trunk and inject again. The injection devices need to be evenly spaced at points on the trunk free of visible decay areas and wounds from the point of injection to where branching begins. If the ABACIDE 2 has not started to absorb within one hour after the second attempt, the vascular system of the tree may be too compromised for treatment or there is significant decay in that local injection area.

DO NOT inject trees that are drought stressed. Applications to drought or heat stressed trees may result in injury to tree tissue, poor treatment and subsequently poor control. Avoid treating trees that are moisture stressed or suffering from herbicide damage.

#### **Monitor Tree Health and Pest Infestations**

Effective injection treatment is favored by a full canopy (i.e., leaves) and a healthy vascular system. Once these tissues are compromised by pest damage (larval galleries, defoliation, leaf mining, etc.), an effective and uniform application of ABACIDE 2 may be difficult to achieve and subsequent control may be poor. For optimal results, treat at least 2 to 4 weeks before pests historically infest the host tree.

**APPLICATION INSTRUCTIONS**

**Timing of Application:**

Preventive applications 2 to 4 weeks prior to anticipated feeding damage will provide better management, but rescue treatments will also perform well with acceptable minimal damage. For bark beetles such as Engraver beetle, Mountain Pine beetle, and Southern pine beetle, late summer/early fall treatments the year prior to next season infestation are preferred, but not exclusive. Focus timing and treatment on the most susceptible stage of the insect pest.

TARGET PESTS and TIMING	
PEST	TIMING
Aphid, Thrip, and Whiteflies	Perform treatments just prior to known insect activity in area.
Cleanwing Moth Borers, such as Ash, Fir, Oak, Pine, Sequoia Pitch Moth, Sycamore, and Willow	
Leaf Beetle and Leaf Miner	
Lepidopteran larvae, such as Bagworm, Spruce Budworm, Webworms, Gypsy Moth, Tent Caterpillars, Oakworm, Tussock Moth, Winter Moth, and Zimmerman Moth	
Mites, such as warm and cool season mites, Palm mites, rust mites, gall mites, and eriophyid mites	Perform treatments 3-4 weeks prior to anticipated insect activity in area. Fall provides better distribution of product throughout tree.
Pine Cone Worm and Pine Seed Bug	
Pinewood Wilt Nematode (except CA)	Perform treatment just prior to nematode activity in the area.
Plant bugs, such as Ash, Honey Locust, and Sycamore	Perform treatments just prior to known insect activity in area.
Roundheaded Borers such as Sawyer beetle (except Asian Longhorned Beetle)	
Sawfly larvae, such as Elm and Pine	
Scolytid Bark Beetle, such as Ips Engraver Beetle, Mountain Pine Beetle, Southern Pine Beetle, Spruce Beetle, Turpentine Beetle, and Western Pine Beetle	Fall provides better distribution of product throughout the tree.
Sycamore Lace Bug	Perform treatments just prior to known insect activity in area.

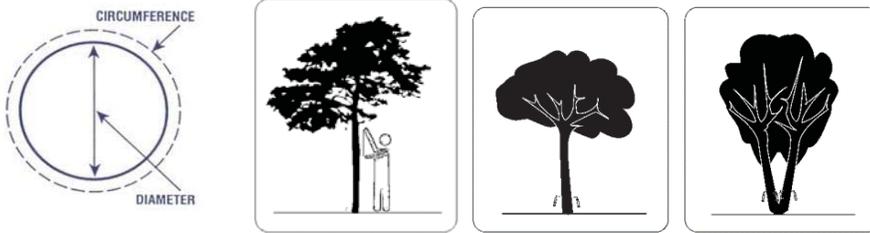
**Combination Treatments:**

When treating for beetles that carry fungi (ambrosia), an additional treatment of fungicide may improve management strategies. Materials to consider are fungicides labeled for use against vascular-inhabiting fungi.

**Number of BRANDT enTREE RTU Micro Tree Injection Devices Required for Treatment**

Injection dosages are based on the Diameter (inches or centimeters) of the tree at Breast Height ("DBH"). DBH is the outside bark diameter of the trunk at 4.5 feet (1.4 m) above the ground on the uphill side of the tree. For the purposes of determining breast height, the ground includes the duff layer that may be present, but does not include unincorporated woody debris that may rise above the ground line.

The diameter is determined by measuring the circumference of the tree at breast height, and dividing circumference (in inches) by three (3). To determine DBH for multi-stemmed woody ornamentals, measure the DBH of each stem or branch and add together for the total DBH per tree.



Take the DBH of the tree and divide by five (5) to determine the appropriate number of BRANDT enTREE RTU devices to adequately treat the tree at the desired application rate. Do not treat newly established trees less than 5" DBH or 15" in circumference.

In the event the tree has multiple trunks that separate less than three (3) feet (from the ground (e.g., avocado, citrus, peach, etc.)), each individual trunk must be treated separately to ensure equally homogenous distribution of solution to all parts of the tree. In this instance, each individual trunk must be measured in the same way as if the trunk were standing individually.

Refer to the Application Rate/Number of RTU Micro Tree Injection Devices chart below. Position the number of injectors evenly around the trunk of the tree. For example, in the case of a 10" diameter tree where 2 injectors are used, place each injector in directly opposing positions on the trunk to allow for even distribution. **DO NOT** exceed calculated number of RTU injection devices per tree as injury may occur.

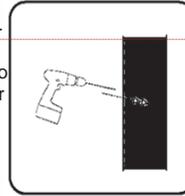
**Application Rate/Number of RTU Micro Tree Injection Devices**

Tree Diameter (DBH) (inches)	Circumference (Inches)	Number of RTU Injectors	Application Rate (mLs)
5 to 7	15 to 21	1	10
8 to 10	24 to 30	2	20
11 to 13	33 to 39	2	20
14 to 16	42 to 48	3	30
17 to 19	51 to 57	4	40
20 to 22	60 to 66	4	40
23 to 25	69 to 75	5	50
26 to 28	78 to 84	6	60
29 to 31	87 to 93	6	60
32 to 34	96 to 102	7	70
35 to 37	105 to 111	7	70
38 to 40	114 to 120	8	80
41 to 43	123 to 129	8	80
44 to 46	132 to 138	9	90
47 to 49	141 to 147	10	100
50 to 52	150 to 156	10	100
53 to 55	159 to 165	11	110
56 to 58	168 to 174	12	120
59 to 61	177 to 183	12	120
62 to 64	186 to 192	13	130
65 to 67	195 to 201	13	130
68 to 70	204 to 210	14	140
71 to 73	213 to 219	15	150

### Preparing the Holes

To ensure an equal and homogenous delivery of active ingredient to all parts of the tree's branching structure, space the required number of holes evenly around the circumference of the tree. Hole placement can range from lowest point at the root flare to highest point at breast height (approximately 4.5 ft [1.4 m] above the ground). Injection holes must be at least 20" (51 cm) below the lowest branch on the trunk. The preferred method is to inject at the base of the tree, within 12" (310 cm) of the soil. Prepare injection sites in healthy wood free from any defects such as old wounds or decayed areas. Avoid placement of devices in between the root flares where there is tight compression of the bark and cambium tissue.

Using an electric drill, select a 1/4" (0.635 cm) fast spiral drill bit (for optimal performance, use a high-helix drill bit). It is necessary to drill holes into the tree deep enough to reach the tree's vascular system for translocation of the active ingredient throughout the tree. Make injection holes at least 1/2 to 3/4 inch into healthy xylem (white wood) with actual depth up to 2 inches (5 cm) or more from the outer trunk surface depending upon the tree species and outer bark thickness. For conifer species with high resin pressure, drill holes higher on the trunk (36-48" or 91-122 cm) and to a deeper drill depth of 2+ inches (5+ cm).

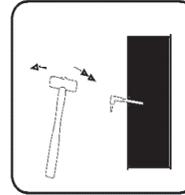


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For optimal device performance and to minimize leakage and improve holding capacity of the injector, be sure to (1) use clean, sharp drill bits; (2) slightly angle depth of hole downwards; and (3) make one clean drill entrance into the tree (i.e., avoid multiple in-and-out motions of drill bit in hole) to reduce residual shavings left inside the hole. Follow good application practices by disinfecting drill bits prior to use on each tree to minimize the spread of disease where known infections occur.

### Inserting the Connector

Once the injection site is drilled, insert the longer and thicker part of the connector into the tree hole and secure its placement by pushing and twisting of hand OR by gently tapping the connector with a nylon hammer or rubber mallet. The connector shall only be inserted to the point where it fits snugly in the hole. DO NOT force the connector too deeply into the hole. Be sure to leave approximately 1/2" (1.3 cm) of open chamber at the end of connector to allow the solution to collect and be pulled through the vascular system of the tree.



### Connecting the RTU Micro Tree Injection Device

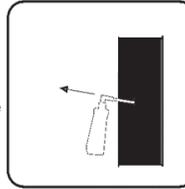
Remove the colored cap and connect the RTU injection device to the connector by firmly pushing the connector through the membrane of the device top. To ensure the device is securely inserted, slightly twist and gently force the RTU injection device until it snaps into final position. The RTU injection device can be placed upright, sideways, or upside-down on the connector, depending upon placement of the connector on the tree.



**Resinous Conifers:** In resinous conifers, such as pine and spruce, start the injection immediately after drilling into the sapwood. A prolonged delay may reduce uptake due to resin flow into the opening.

### Removing the RTU Micro Tree Injection Device

When the RTU injection device is empty, (1) remove the device from its connector and then (2) remove the connector from the tree. Gently shake the device to ensure all contents have been injected. If there is remaining material, re-insert the connector and connect the device for further uptake. Note: The RTU injection device membrane will re-seal itself to avoid any leakage or spillage until it is re-penetrated with the connector. It is not necessary to treat the drill holes with wound paint or other sealing compounds.



### Retreatment

At time of initial application, make note of the health level of each tree. Reevaluate health level in treated trees at 12-month intervals to determine the need for retreatment. Consider preventive applications 12-36 months after the initial treatment. Evaluate trees in high pest pressure areas or highly valued trees for retreatment 12 months after each treatment. Follow application procedures described above for repeat injections; new drill holes will be required for subsequent treatments. Stagger the holes equally in subsequent applications to ensure proper uptake.

### Trouble Shooting Tips for Injection

**Problem:** Solution is not taking up.

**Possible cause:** Connector is put in too deeply in the injection hole preventing the solution from pooling inside tree and/or taking up.

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**Solution:** Follow instructions for removal, and re-insert the connector and connect the device for further uptake. Be sure to leave approximately ½" (1.27 cm) of open chamber at the end of connector to allow the solution to collect and be pulled through the vascular system of the tree.

**Problem:** Solution is not taking up.

**Possible Cause:** Injection device is not fully inserted on the connector creating a loose connection preventing the solution from pooling inside tree and/or taking up.

**Solution:** To ensure the device is securely inserted, slightly twist and gently force the RTU injection device until it snaps snugly into final position.

**Problem:** Solution is leaking from drilled hole.

**Possible Cause:** The connector is not fully inserted into the hole in the tree. Alternatively, the connector is inserted deeply enough, but the solution is not moving through the vascular system of the tree due to a variety of issues (injury to vascular system, temperature, lack of moisture, etc.) Alternatively, the hole could be too large of a diameter.

**Solution:** Ensure the hole is not too large; if for some reason the hole was made too large (too large of a drill bit, faulty chuck in the drill bit etc.) follow instructions for removal, drill a new hole with the proper size drill bit and functional drill, and insert the connector. Ensure the connector is in deep enough by providing a few light taps with a rubber mallet to move the connector slightly deeper into the hole. Finally, be sure that the time of injection is conducive for uptake. (Please refer to label section regarding optimal conditions for tree uptake.

#### STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

**PESTICIDE STORAGE:** Keep pesticide in original container. Store in a cool (45°F-90°F), dry place out of direct sunlight and out of reach of children and animals.

**PESTICIDE DISPOSAL:** Waste resulting from the use of these devices may be disposed of on site or at an approved waste disposal facility. Remove connector from device for disposal.

**CONTAINER HANDLING:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available, or dispose of in a sanitary landfill, or by incineration if approved by state and local authorities. Do not burn unless allowed by state and local ordinances. If burned, stay out of smoke.

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List of optional label claims:

- Brandt enTREE Injection System is an Advanced Tree Health Technology
- Begins absorbing upon injection
- Brandt enTREE Injection Device is a breakthrough technology
- Connect directly to the tree
- Convenient (Simple) (Design)
- Easy(-ier) to use (convenient, handy, useful, well-situated)
- Easy to apply
- Easy to store
- Easy (to use)
- Easy to use application
- Economical
- Even if it rains - it won't lose its effectiveness
- Ideal for targeting specific infested locations (in orchards)
- It works!
- A single application lasts one growing season
- No mix, no mess
- No mixing (necessary) (required)
- Once it enters the tree it won't wash off
- Only takes a few minutes to inject
- Preventative treatment
- Ready to Use
- Shake well before application (applying)
- Ready to Use applicator (device)
- Quick and easy to use
- Ready to Use – No Mixing, No Measuring
- Requires no mixing
- Results that show
- (The) Next Generation of Tree Care (Low pressure tree injection)
- Trusted results for satisfaction
- Works on (pest list)
- Works!
- This ready to use insecticide is an insecticide designed to kill (control) (suppress) listed pests on (insert tree species listed on label)

Promotional options:

- Save up to \$(x) on (your) next purchase
- (X)% free (more)
- Great value
- Bonus size
- Free sample
- Sample not for sale
- Free (insert brand name) (insert amount) value
- Reasonably priced
- Additional savings
- Cost saving consumables
- Economical
- Invest in labor rather than equipment (machinery)

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PACKAGING RELATED CLAIMS:

- Brandt enTREE is a breakthrough technology
- Connect directly to tree
- Controlled delivery
- Convenient
- Quick connect applicator
- New(!)
- Quick connect applicator (device)
- Quick connect injection (applicator) (device)
- Quick & (and) easy to use
- Delivers direct treatment
- Direct injection (inject) (injecting)
- Easy
- Easy and convenient
- Easy to store (and dispose) (see instructions)
- Easy to use
- Eliminate(s) mixing
- The easy way to treat (with brand name)
- The easier way to treat (with brand name)
- Next generation of tree care: (low pressure tree injection LPTI)
- No (more) hand fatigue
- No constant trigger squeezing
- No more pumping
- No pumping just inject
- No cumbersome set up
- No equipment clean up
- No costly machines or bulky equipment
- No high pressure forced delivery
- No product wastage
- No complicated mixing steps of chemistries
- Only takes a few minutes to apply
- Precise control for maximum accuracy
- Prepackaged chemicals
- Prevents spillage
- Consistent injection for maximum accuracy
- No more tired (aching) hands
- Fast and easy application
- Easy to use application (injection)
- Easy to use injection
- Change the way you(tree inject) (inject)
- No more spray! Inject!
- Ideal for large or small jobs (areas)
- Great for large or small jobs (areas)
- Precise control
- Prepackaged chemicals
- Save (Saves) time and energy
- Give your hands a break
- Accurate
- Convenient
- Effective
- Efficient (concentrations)
- Economical
- No more bending over
- Fast and easy application
- Full and efficient delivery
- Improved Applicator (application) Device!
- Simple!
- Improved Applicator (Application) System! (Device!)
- Improved Applicator (Application)!
- Improved!
- New and Improved!
- New!
- No (More) Hand Fatigue!

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- No Mix, No Mess
- No more pumping, no more pulling, just inject
- No spray! Just inject!
- No more tired (aching) hands
- Minimal investment in equipment and consumables
- Precise control for maximum accuracy
- Quick & Easy to Use
- Save (Saves) time and energy
- Uses tree's natural transpiration system for (quick) absorption
- Simplified equipment
- Simplified calculations
- Simplified pre-filled ready to use devices
- Targeted injection
- Target infested spots
- The easy way to inject
- The fast and easy way to inject!
- Change the way you (tree) inject
- (New) Comfort injector
- Treat(ment) of more trees in less time